REMARKS

By the present amendment and response, independent claims 1 and 9 have been amended to overcome the Examiner's objections. Claims 5 and 13 has been amended to correct an improper reference designation and claim 8 has been amended to correct a typographical error. Claims 1-3, 5-11, 13-17, 19, and 20 are pending in the present application and claims 17, 19, and 20 have been allowed. Reconsideration and allowance of outstanding claims 1-3, 5-11, and 13-16 in view of the following remarks are requested.

The Examiner has rejected claims 1-3, 5-6, 9-11, and 13-14 under 35 USC §103(a) as being unpatentable over Figures 1a-3b of the present application ("Figures 1a-3b") in view of U.S. patent number 6,177,353 to Gutsche et al. ("Gutsche") and U.S. patent number 6,200,909 to Torek et al. ("Torek"). For the reasons discussed below, Applicant respectfully submits that the present invention, as defined by amended independent claims 1 and 9, is patentably distinguishable over Figures 1a-3b, Gutsche, and Torek, either singly or in combination.

The present invention, as defined by amended independent claims 1 and 9, teaches, among other things, "an inorganic ARC layer disposed directly on the metal layer and directly on the topical non-planarities extending from the metal layer," where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities extending from the metal layer. As disclosed in the present application, a metal layer can comprise structures, such as steps, ridges, or other topical non-planarities,

that extend from the metal layer. As disclosed in the present application, an inorganic dielectric ARC layer can be applied directly on the metal layer and on the topical non-planarities extending from the metal layer by utilizing a chemical vapor deposition ("CVD") process, such as a plasma enhanced chemical vapor deposition ("PECVD") process. As a result, the present invention advantageously achieves an inorganic dielectric ARC layer that is situated directly on the metal layer and the topical non-planarities extending from the metal layer, where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities that extend from the metal layer.

In contrast to the present invention as defined by amended independent claims 1 and 6, Figures 1a-3b do not teach, disclose, or suggest "an inorganic ARC layer disposed directly on the metal layer and directly on the topical non-planarities extending from the metal layer," where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities extending from the metal layer. Figures 1a-3b specifically disclose metal stack 302, which comprises metal layer 314 situated on barrier layer 316 and organic ARC layer 312 situated on metal layer 314. However, Figures 1a-3b fail to teach, disclose, or suggest an inorganic dielectric ARC layer disposed directly on a metal layer, which comprises topical non-planarities extending from the metal layer. Furthermore, Figures 1a-3b fail to teach, disclose, or suggest an inorganic dielectric ARC layer disposed directly on a metal layer and on topical non-planarities extending from the

metal layer, where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities that extend from the metal layer.

In contrast to the present invention as defined by amended independent claims 1 and 6, Gutsche does not teach, disclose, or suggest "an inorganic ARC layer disposed directly on the metal layer and directly on the topical non-planarities extending from the metal layer," where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities extending from the metal layer. Gutsche specifically discloses hard mask 510 situated over barrier/ARC layer 508, which is situated over metal layer 506. See, for example, column 5, lines 24-39 and Figure 5 of Gutsche. In Gutsche, hard mask 510 can comprise silicon oxynitride, oxide, silicon nitride, field oxide, or any combination thereof. See, for example, Gutsche, column 5, lines 38-41. However, Gutsche fails to teach, disclose, or suggest an inorganic dielectric ARC layer disposed directly on a metal layer and on topical non-planarities extending from the metal layer, where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities that extend from the metal layer.

In contrast to the present invention as defined by amended independent claims 1 and 6, Torek does not teach, disclose, or suggest "an inorganic ARC layer disposed directly on the metal layer and directly on the topical non-planarities extending from the metal layer," where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities extending from the metal layer. Torek specifically discloses gate electrodes 14, which are formed in and on substrate 10, and

dielectric layer 16, which is deposited over gate electrodes 14 and substrate 10. See, for example, column 3, lines 1-8 and Figure 3 of Torek. In Torek, oxide layer 20 is grown over dielectric layer 16 and DARC layer 24 is deposited over oxide layer 20, where DARC layer 24 is an inorganic antireflective coating. See, for example, Torek, column 3, lines 7-18. Thus, in Torek, since DARC layer 24 is deposited over oxide layer 20, DARC layer 24 is disposed directly on a metal layer as specified in amended independent claims 1 and 9. Furthermore, Torek fails to teach, disclose, or suggest an inorganic dielectric ARC layer disposed directly on a metal layer and on topical non-planarities extending from the metal layer, where the inorganic dielectric ARC layer has a substantially uniform thickness over the topical non-planarities that extend from the metal layer.

For the foregoing reasons, Applicant respectfully submits that the present invention, as defined by amended independent claims 1 and 9, is not suggested, disclosed, or taught by Figures 1a-3b, Gutsche, and Torek, singly or in combination thereof. Thus, amended independent claims 1 and 9 are patentably distinguishable over Figures 1a-3b, Gutsche, and Torek and, as such, claims 2-3 and 5-6 depending from amended independent claim 1 and claims 10-11 and 13-14 depending from amended independent claim 9 are, *a fortiori*, also patentably distinguishable over Figures 1a-3b, Gutsche, and Torek for at least the reasons presented above and also for additional limitations contained in each dependent claim.

The Examiner has further rejected claims 7-8 under 35 USC §103(a) as being unpatentable over Figures 1a-3b, Gutsche, and Torek as applied to claims 1-3, 5-6, 9-11

and 13-14, and further in view of U.S. patent number 6,121,133 to Iyer et al. ("Iyer"). As discussed above, amended independent claim 1 is patentably distinguishable over Figures 1a-3b, Gutsche, and Torek. Thus claims 7-8 depending from amended independent claim 1 are also patentably distinguishable over Figures 1a-3b, Gutsche, and Torek.

The Examiner has further rejected claims 15-16 under 35 USC §103(a) as being unpatentable over Figures 1a-3b, Gutsche, and Torek as applied to claims 1-3, 5-6, 9-11 and 13-14, and further in view of U.S. patent number 6,166,427 to Huang et al. As discussed above, amended independent claim 9 is patentably distinguishable over Figures 1a-3b, Gutsche, and Torek. Thus claims 15-16 depending from amended independent claim 9 are also patentably distinguishable over Figures 1a-3b, Gutsche, and Torek.

Based on the foregoing reasons, the present invention, as defined by amended independent claims 1 and 9 and claims depending therefrom, is patentably distinguishable over the art cited by the Examiner. Thus, dependent claims 2-3, 5-8, 10-11, and 13-16 are also patentably distinguishable over the art cited by the Examiner. As such, and for all the foregoing reasons, an early allowance of outstanding claims 1-3, 5-11, and 13-16 and an early Notice of Allowance for all pending claims 1-3, 5-11, 13-17, 19, and 20 is respectfully requested.

Respectfully Submitted,
FARJAMI & FARJAMI LLP

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Michael Farjami, Esq.
Reg. No. 38, 135

Michael Farjami, Esq.
FARJAMI & FARJAMI LLP
16148 Sand Canyon
Irvine, California 92618
Telephone: (949) 784-4600
Facsimile: (949) 784-4601

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